

## 2016 Factsheet

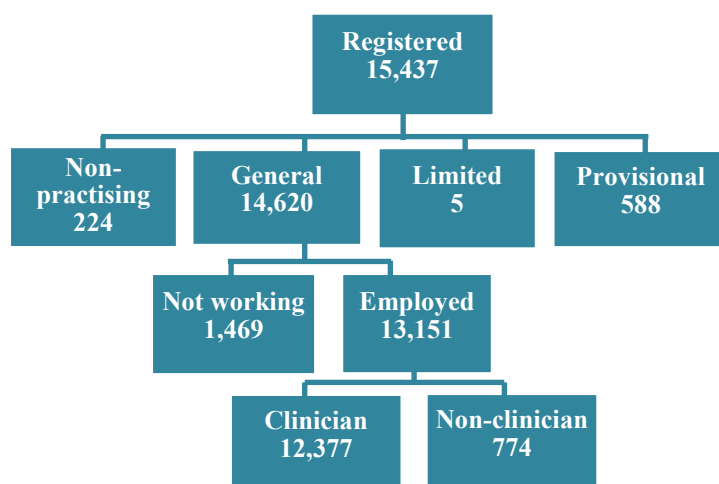
Medical radiation practitioners are registered healthcare practitioners who perform diagnostic imaging studies on patients, plan and administer radiation treatments, or prepare and administer nuclear medicine.

There are three divisions of practice for medical radiation practitioners: nuclear medicine technology, radiation therapy and diagnostic radiography.

Persons seeking to gain registration must complete a minimum three year undergraduate, or two year postgraduate master program of study approved by the Medical Radiation Practice Board of Australia.

### Workforce

Figure 1: Breakdown of the medical radiation practitioner workforce, 2016



'Non-clinician' includes roles reported by survey respondents that did not fit predefined survey categories.

In 2016, the registered workforce has increased by 10.2% (1,435) since 2013, with an average yearly growth rate of 3.3%.

*Note: Analysis of the medical radiation practitioner workforce contained in this document is based on the number of registered and employed practitioners (13,156 in 2016) unless otherwise stated.*

Table 1: Headcounts for the combined medical radiation practitioner workforce, 2013-2016

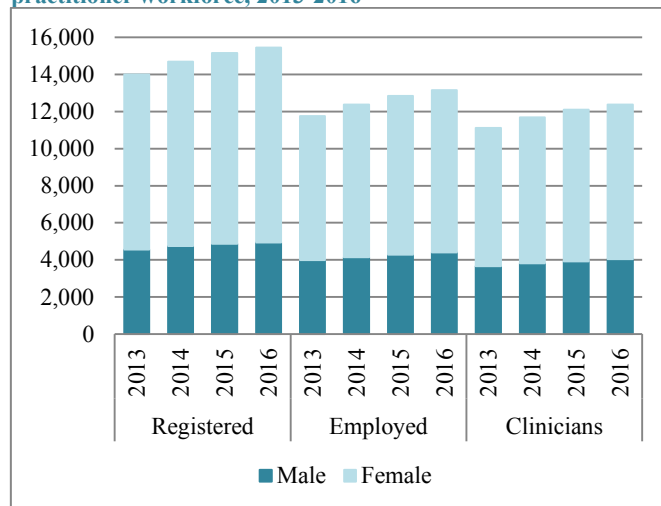
	2013	2014	2015	2016
Registered	14,002	14,680	15,149	15,437
Employed	11,757	12,379	12,830	13,156
Clinicians	11,105	11,688	12,093	12,377

### Demographics

In 2016, 66.5% of registered and employed workforce was female, up from 66.1% in 2013.

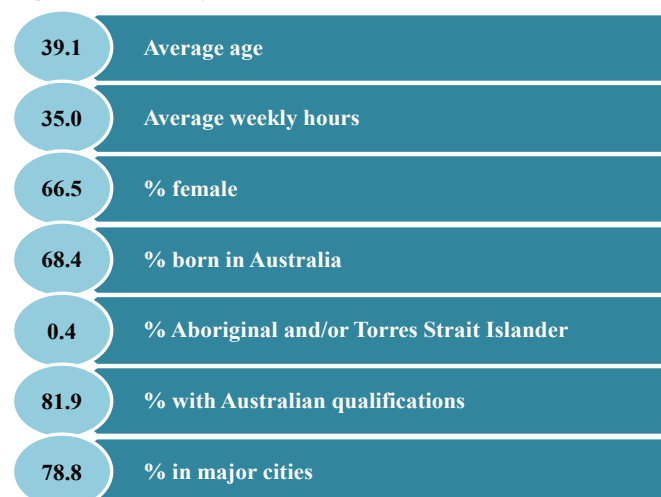
The average age of the workforce in 2016 was 39.1 years, down slightly from 39.2 in 2013.

Figure 2: Gender distribution for the medical radiation practitioner workforce, 2013-2016



### Quick Facts - 2016

Figure 3: Summary of workforce, 2016



### Hours Worked

In 2016, the workforce worked an average of 35.0 hours per week, down from 35.4 in 2013.

Table 2: Average hours per week worked by registered and employed medical radiation practitioners, 2013-2016

Average hours worked	2013	2014	2015	2016
Clinical	32.7	32.7	32.8	32.4
Non-clinical	2.7	2.7	2.7	2.7
<b>Total</b>	<b>35.4</b>	<b>35.4</b>	<b>35.5</b>	<b>35.0</b>

In 2016, females worked an average of 33.1 hours per week and males an average of 38.9 hours per week. Males aged 20-34 worked the longest hours on average per week at 39.3.

**Table 3: Average hours worked per week by gender and age group, 2013 vs 2016**

Age Group	Males - average hours		Females - average hours	
	2013	2016	2013	2016
20-34	39.6	39.3	36.6	36.5
35-44	39.4	39.2	29.7	29.6
45-54	39.9	39.1	32.3	31.7
55-64	37.7	38.1	31.2	30.4
65-74	32.8	34.1	27.6	24.7
75-99	np	28.4	np	np
<b>Total</b>	<b>39.2</b>	<b>38.9</b>	<b>33.4</b>	<b>33.1</b>

Note: 'np' denotes that the numbers have been suppressed for confidentiality reasons

### Replacement Rate

In 2016, there were 1.4 new registrants for every practitioner that did not renew their registration from 2015. The replacement rate has decreased from 1.9 in 2015 and 2.1 in 2014.

### Job Role

The 2016 workforce survey asked respondents to report their principal role (the main job in which the most hours were worked in the last week).

### Principal Role

A total of 94.1% (12,382) of the workforce worked primarily in a clinician role in 2016, down from the 94.5% (11,105) in 2013.

**Table 4: Headcounts by principal role, 2013 vs 2016**

Principal role	Total Employed	
	2013	2016
Clinician	11,105	12,382
Administrator	322	365
Teacher or educator	183	237
Researcher	59	69
Other	88	103
<b>Total</b>	<b>11,757</b>	<b>13,156</b>

### Principal Work Sector (public/private)

The 2016 workforce survey asks respondents to report the clinical hours worked in their principal role (the main job in which they worked the most hours in the last week) and their second job (either for a different employer or in a different area of practice), if applicable, in either the public or private sector.

In 2016, 47.0% (6,182) of the workforce worked clinical hours in the public sector, down from 47.3% (5,563) in 2013, and 48.1% (6,324) worked clinical hours in the private sector, up from 47.3% (5,562) in 2013.

**Table 5: Headcounts by sector 2013 vs 2016**

Employment sector	Headcount	
	2013	2016
<b>Public sector only</b>	5,563	6,182
<i>Proportion (%)</i>	47.3%	47.0%
<b>Private sector only</b>	5,562	6,324
<i>Proportion (%)</i>	47.3%	48.1%
<b>Both</b>	270	277
<i>Proportion (%)</i>	2.3%	2.1%
<b>Total</b>	<b>11,757</b>	<b>13,156</b>

Note: Not applicable responses have been excluded from this table, but are included in the total

### Principal Work Setting

In 2016, 55.1% (7,245) of practitioners worked in a hospital setting, down from 55.4% (6,511) in 2013. The next most common work setting in 2016 was in group private practice with 32.6% (4,284), up from 31.6% (3,721) in 2013.

**Table 6: Principal work setting by headcount and average hours worked, 2013 vs 2016**

Principal work setting	2013		2016	
	Headcount	Avg. total hours	Headcount	Avg. total hours
Hospital	6,511	36.0	7,245	35.7
Group private practice	3,721	34.9	4,284	34.1
Solo private practice	719	34.3	719	33.8
Other private practice	194	33.7	191	37.7
Community health care service	128	32.3	187	31.0
Tertiary educational facility	108	37.3	143	36.8
Other government department or agency	163	30.9	138	31.9
Other	76	33.0	80	32.7
Other commercial/business service	52	38.8	82	40.6
Independent private practice	55	30.5	52	35.0
<i>Remaining work settings</i>	30	np	37	np
<b>Total</b>	<b>11,757</b>	<b>32.7</b>	<b>13,156</b>	<b>32.4</b>

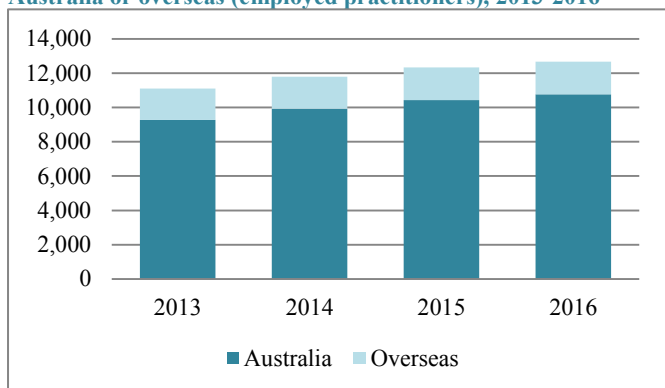
Note: 'np' indicates that the average total hours are not available for this combined category.

### Initial Qualification

The workforce survey asked health professionals where they obtained their initial qualification.

In 2016, 81.8% (10,768) of respondents indicated that they had obtained their initial qualification(s) in Australia, and 14.4% (1,894) indicated that they had obtained their initial qualification(s) overseas.

**Figure 4: Country where the initial qualification was obtained – Australia or overseas (employed practitioners), 2013-2016**

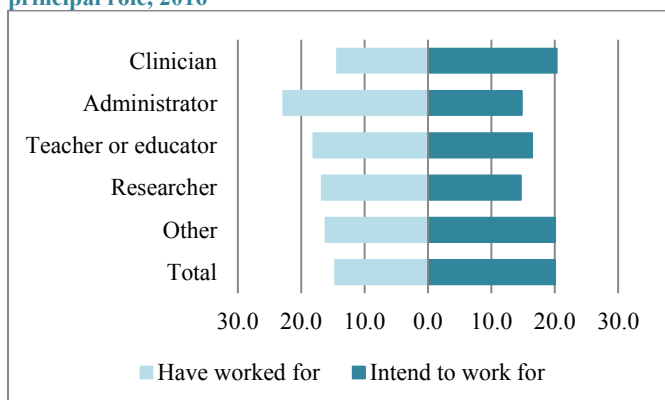


### Working Intentions

In 2016, medical radiation practitioners had worked in the profession for an average of 14.6 years and intended to work for another 20.0 years.

In 2013, practitioners had worked for an average of 14.5 years, and intended to work for another 19.2 years.

**Figure 5: Years worked and years intended to work by principal role, 2016**



### Distribution

#### State and Territory

Overall the rate of practitioners per 100,000 population increased by 3.5 per 100,000 between 2013 and 2016 from 50.8 to 54.3.

In 2016, South Australia had the highest rate of practitioners with 60.8 per 100,000 population (an increase of 2.5 per 100,000 compared to 2013), followed by Queensland with 56.5, and then the Australian Capital Territory with 56.0.

The highest average total hours worked in 2016 was in the Australian Capital Territory at 36.1 hours per week and lowest in New South Wales at 34.0 hours per week.

FTE (1.0 FTE is equivalent to one full-time worker) was lower than headcount at the national level, particularly in New South Wales and Victoria, indicating that more practitioners may be

working part-time in these states.

**Table 7: Distribution by state/territory, 2016**

2016 State & Territory	Headcount	Total FTE	Avg. total hours	<sup>2</sup> Rate per 100,000 population
NSW	4,325	3,865.6	34.0	55.9
VIC	3,321	3,132.8	35.9	53.7
QLD	2,739	2,592.6	36.0	56.5
SA	1,041	932.8	34.1	60.8
WA	1,136	1,047.3	35.0	44.4
TAS	271	255.1	35.8	52.4
ACT	226	214.6	36.1	56.0
NT	90	84.2	35.6	36.6
<b>Total</b>	<b>13,156</b>	<b>12,131.5</b>	<b>35.0</b>	<b>54.3</b>

Note: 'Not stated/Unknown' responses are excluded from this table but are included in the total

<sup>2</sup>ABS - 3218.0 - Regional Population Growth, Australia, 2015-16

#### Remoteness Area

In 2016, 94.1% of the workforce (12,376) worked in either major cities or inner regional locations, slightly down from 94.2% (11,074) in 2013.

In 2016, the average total hours worked per week were highest in remote and very remote areas at 36.9 hours.

**Table 8: Distribution by remoteness area, 2016**

2016 Remoteness Area	Headcount	Total FTE	Avg. total hours	<sup>3</sup> Rate per 100,000 population
Major cities	10,361	9,521.1	34.9	60.1
Inner regional	2,015	1,875.8	35.4	45.9
Outer regional	673	630.5	35.6	32.2
Remote	76	73.8	36.9	24.7
Very remote	26	25.2	36.9	13.4
<b>Total</b>	<b>13,156</b>	<b>12,131.5</b>	<b>35.0</b>	<b>54.3</b>

Note: 'Not stated/Unknown' responses are excluded from this table but are included in the total

<sup>3</sup>ABS - 3222.0 - Population Projections, Australia, 2016

#### Other Work Location Outside of Major Cities

The 2016 workforce survey asked respondents who had noted their principal and second job location as a major city if they had also worked in either a regional, rural or remote location.

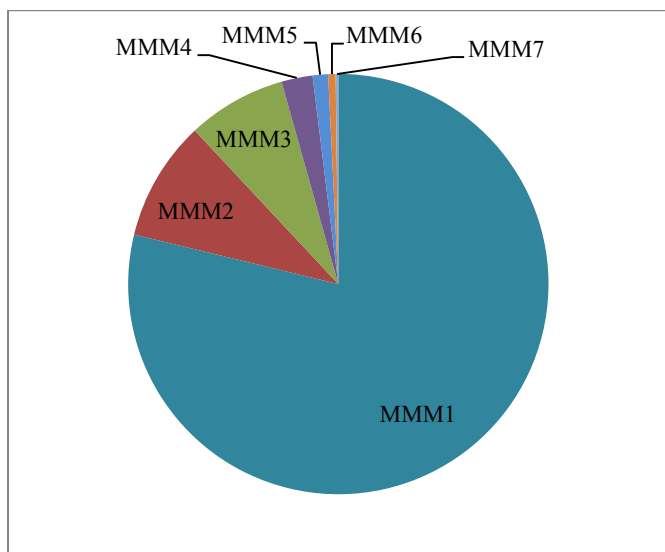
In 2016, 4.7% (620) of the workforce reported that they had, in addition to their principal and second job location, worked in a regional, rural or remote location: 53.2% (330) of respondents indicated that they had worked in inner regional, 23.5% (146) had worked in outer regional; 2.7% (17) worked in remote; and 2.6% (16) had worked in very remote locations.

## Modified Monash Model

The majority (78.8%) of the workforce were located in a major city or a location considered as MMM1 under the Modified Monash Model (MMM) classification system in 2016, down from 79.7% in 2013 (see [www.doctorconnect.gov.au](http://www.doctorconnect.gov.au) for more information on the MMM).

MMM3 locations had the highest rate of practitioners with 64.8 per 100,000 population, followed by MMM1 with 61.4 per 100,000 population. The lowest rate was in MMM5 locations with 8.8 per 100,000 population.

Figure 6: Proportion of the workforce by MMM location - 2016



## Tele-Health

Tele-health is the use of telecommunication techniques for the purpose of providing telemedicine, medical education, and health education over a distance. A question was added in the 2016 workforce survey to determine the average hours per week practiced via tele-health in the previous year.

A total of 11.5% (1,515) of the workforce provided a response to the tele-health question. On average, these respondents practiced via tele-health for 23.0 hours per week.

In 2016, 71.9% of tele-health services were provided by medical radiation practitioners in a major city.

Table 9: Tele-health workforce remoteness location – 2016

Major cities	Inner regional	Outer regional	Remote	Very remote
71.9%	19.2%	6.4%	1.9%	0.5%

Note: The tele-health workforce remoteness location refers to the location of the person in the workforce, not the location of the person receiving the service.

## Divisions of Practice

Note: The employment count for **all medical radiation practitioners** is derived from the total headcount, whereas the employed counts by division (nuclear medicine technology, medical radiation therapy and radiography) are based on working hours in each division.

If a practitioner records hours in more than one division, they will be counted as employed in each of those divisions. For example, someone who reports hours worked as a nuclear medicine technologist and a medical radiation therapist will be reported in both employed counts.

## Nuclear Medicine Technology

In 2016, 7.2% (941) of all medical radiation practitioners worked in the division of nuclear medicine technology, up from 6.8% (805) in 2013.

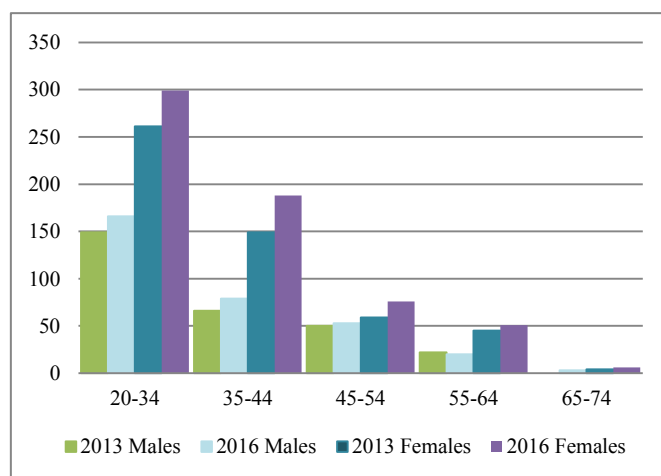
Table 10: Headcounts for the nuclear medicine technology workforce, 2013-2016

Nuclear medicine technology division	2013	2014	2015	2016
Registered	985	1,048	1,104	1,142
Employed	805	859	892	941
Clinicians	762	810	842	894

## Demographics

In 2016, 65.9% (620) of the nuclear medicine technology workforce was female, up from 64.3% (518) in 2013.

Figure 7: Gender and age of the nuclear medicine technology workforce, 2013 vs 2016



## Radiation Therapy

In 2016, 14.8% (1,952) of all medical radiation practitioners worked in radiation therapy. In 2013, the proportion was 15.5% (1,822).

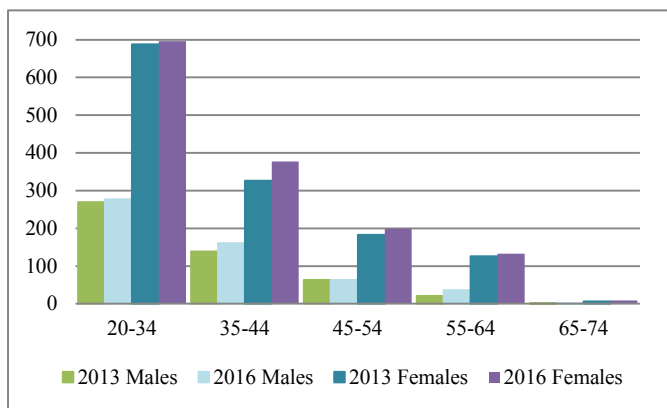
**Table 11: Headcount of the radiation therapy workforce, 2013-2016**

Radiation therapy division	2013	2014	2015	2016
Registered	2,209	2,295	2,325	2,350
Employed	1,822	1,888	1,895	1,952
Clinicians	1,678	1,726	1,739	1,767

### Demographics

In 2016, 72.4% (1,414) of the radiation therapy workforce was female, a slight decrease from 72.9% (1,329) in 2013.

**Figure 8: Gender and age of the radiation therapy workforce, 2013 vs 2016**



### Radiography

In 2016, 78.1% (10,280) of all medical radiation practitioners worked in radiography. In 2013, the proportion was 77.8% (9,149).

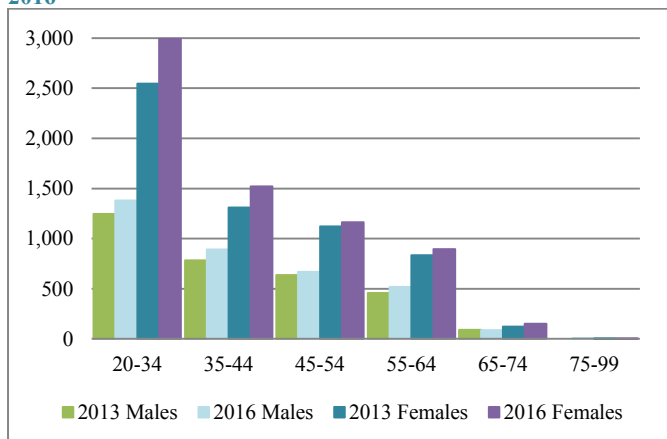
**Table 12: Headcounts for the radiography workforce, 2013-2016**

Radiography division	2013	2014	2015	2016
Registered	10,829	11,355	11,736	11,962
Employed	9,149	9,648	10,058	10,280
Clinicians	8,683	9,167	9,527	9,736

### Demographics

In 2016, 65.5% (6,729) of the divisional workforce was female, up from 64.9% (5,938) in 2013.

**Figure 9: Gender and age of the radiography workforce, 2013 vs 2016**



## Distribution

### State and Territory

In 2016, New South Wales had the highest number of nuclear medicine technologists 352, radiation therapists 619 and radiographers at 3,355 respectively.

Victoria had the second highest across these three divisions at nuclear medicine technologists 268, radiation therapists 517 and radiographers at 2,538 respectively.

**Table 13: Distribution of employed medical radiation practitioner's headcount by division of practice and state/territory, 2013 vs 2016**

State/Territory	Nuclear medicine technology		Radiation therapy		Radiography	
	2013	2016	2013	2016	2013	2016
NSW	303	352	572	619	2,929	3,355
VIC	221	268	493	517	2,270	2,538
QLD	129	153	372	424	1,889	2,172
SA	62	69	128	123	785	850
WA	58	60	146	150	866	928
TAS	16	np	50	54	177	202
ACT	np	21	52	53	145	152
NT	np	np	9	10	84	78
<b>Total</b>	<b>805</b>	<b>941</b>	<b>1,822</b>	<b>1,952</b>	<b>9,149</b>	<b>10,280</b>

Note: 1. 'Not stated/Unknown' responses are excluded from the table but are included in the total. 2. 'np' denotes that the counts have been suppressed for data confidentiality reasons.

### Remoteness Area

In 2016, 97.1% (914) of nuclear medicine technologists, 96.1% (1,874) of radiation therapists and 93.4% (9,603) of radiographers were located in major cities or inner regional locations.

No nuclear medicine technologists or radiation therapists were located in very remote locations.

**Table 14: Distribution of employed medical radiation practitioner's headcount by division of practice and remoteness area, 2013 vs 2016**

Remoteness Area	Nuclear medicine technology		Radiation therapy		Radiography	
	2013	2016	2013	2016	2013	2016
Major cities	688	789	1,504	1,579	7,189	8,006
Inner regional	98	125	256	295	1,357	1,597
Outer regional	19	np	62	76	516	573
Remote	0	np	0	0	62	75
Very remote	0	0	0	0	25	26
<b>Total</b>	<b>805</b>	<b>941</b>	<b>1,825</b>	<b>1,952</b>	<b>9,149</b>	<b>10,280</b>

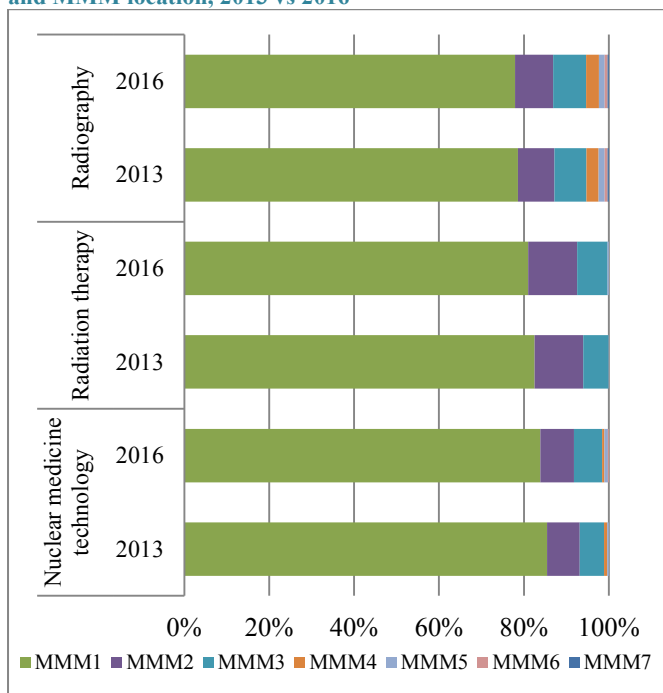
Note: 1. 'Not stated/Unknown' are excluded from this table but are included in the total. 2. 'np' denotes that the counts have been suppressed for confidentiality reasons.

## Modified Monash Model

The majority of the medical radiation practitioner workforce were located in a major city or a location considered as MMM1 under the Modified Monash Model classification system in 2016 (83.8% of nuclear medicine technologists, 80.9% of radiation therapists, and 77.9% of radiographers).

In 2013, the proportions were 85.5%, 82.5% and 78.6% respectively.

**Figure 10: Proportion of the workforce by division of practice and MMM location, 2013 vs 2016**



## References

- 1) National Health Workforce Dataset (NHWDS): Allied Health Practitioners 2013-2016.
- 2) ABS - 3218.0 - Regional Population Growth, Australia, 2015-16, Released 30/06/17.
- 3) ABS - 3222.0 - Population Projections, Australia, 2016.

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